

ABSTRACT OF THE DISCLOSURE

A crystallization apparatus includes an optical illumination system to illuminate a phase shift mask and which irradiates an amorphous semiconductor film with a light beam having an inverse peak type light intensity distribution including a minimum light intensity in a point corresponding to a phase shift portion of the phase shift mask to produce a crystallized semiconductor film. A wavefront dividing element is disposed on a light path between the optical illumination system and the phase shift mask. The wavefront dividing element wavefront-divides the light beam supplied from the optical illumination system into a plurality of light beams, and condenses the wavefront-divided light beams in the corresponding phase shift portion or in the vicinity of the portion.